CLAIMS

1. Spraycoating apparatus to spraycoat front and/or rear sides (16) of circular objects (4), in particular the front/rear sides of wheels and rims, with coating material while the objects (4) are being carried by a conveyor (2; 96),

characterized

by a support (60) comprising at least one power takeoff element (62, 63, 64, 65) rotatable about an axis of rotation (66) and at least one drive element (70; 72) to rotate to and fro the minimum of one power takeoff element (62, 63, 64, 65) through a predetermined angle of rotation; by one spray device holder (76) per power takeoff element (62, 63, 64, 65) , said holder comprising a rear holder end (78) as seen in the direction of spraying which is irrotationally connected or connectable to the power takeoff element (62, 63, 64, 65) and at least one front holder end (84, 86) as seen in the direction of spraying which is connected or connectable to at least one spray device (80, 81), the front holder end (84, 86) being radially offset relative to the axis of rotation (66) in a manner that, jointly with the spray device (80, 81) and this spray device's spray jet (6), said front holder end is rotatable to and fro by the predetermined angle of rotation in arcuate manner about the axis of rotation (66) of the power takeoff element (62, 63, 64, 65) while the object to be coated is irrotationally configured opposite the spray device (80, 81).

2. Spraycoating apparatus as claimed in claim 1, characterized in that the axis of rotation (66) of the power takeoff element (62, 63, 64, 65) points substantially vertically downward and in that the minimum of one spray device (80, 81) is configured lower than the power takeoff element.

3. Spraycoating apparatus as claimed in claim 1, characterized in that the axis of rotation (66) of the power takeoff element (62, 63, 64, 65) is configured substantially

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horizontally and in that the minimum of one spray device (80, 81) is configured farther to the front than the power takeoff element.

4. Spraycoating apparatus as claimed in any of the above claims, characterized in that the predetermined angle of rotation is 360° or less than 360° but large enough that the sprayjet cross-section of the spray device (80, 81) at the front side (16) of the object (4) at least partly overlaps itself in the reversal positions of the direction of rotation.

5. Spraycoating apparatus as claimed in one of claims 1 through 4, characterized in that the spray device holder (76) is fitted with two holder ends (84, 86) each of which is connected or connectable to at least one spray device (80, 81) and in that the two front holder ends (84, 86) are diametrically opposite by about 180° relative to the axis of rotation.

6. Spraycoating apparatus as claimed in claim 5, characterized in that the predetermined angle of rotation is 180° or less than 180° but large enough that the sprayjet cross-sections of the two spray devices (80, 81) at least partly overlap in the reversal positions of the direction of rotation.

7. Spraycoating apparatus as claimed in either of claims 5 and 6, characterized in that the centers of the spray jets of the spray devices (80, 81) when in the reversal position of the direction of rotation are situated in a theoretical plane itself also situated in the axis of rotation (66) and being radial relative to the axis of rotation, said theoretical plane subtending an angle between 0° and at most 30° with a horizontal direction.

8. Spraycoating apparatus as claimed in any of the above claims, characterized in that the support (60) is fitted with at least two of said power takeoff elements (62, 63, 64, 65),

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of which the horizontal axes of rotation (66) are configured parallel and vertically mutually superposed.

9. Spraycoating apparatus as claimed in any of the above claims, characterized in that the holder (60) is a carriage or a slide horizontally and automatically displaceable synchronously with and parallel to the objects transversely to the axis of rotation (66) as a function of the signals from a control unit.

10. Spraycoating apparatus as claimed in any of the above claims, characterized in that the holder (60) is a carriage or a slide able to move to and fro in the axial direction of the axis of rotation (66).

11. Spraycoating apparatus as claimed in any of the above claims, characterized in that the spray device holder (76) is designed to position the minimum of one spray device (80, 81) at different distances from the rotatable power takeoff element (62, 63, 64, 65).

12. Spraycoating apparatus as claimed in any of the above claims, characterized in that the power takeoff element (62, 63, 64, 65) is axially displaceable into various positions along its axis of rotation (66) relative to the support (60).

13. Spray device as claimed in any of the above claims, characterized by a conveyor to move the objects (4) transversely to the axis of rotation of the minimum of one power takeoff element (62, 63, 64, 65).

14. Method to spraycoat front/rear sides (16) of circular objects (4), in particular front/rear sides of wheels and rims, with a coating material which is sprayed by at least one

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spray device (80, 81) onto the front side (16) while the object (4) is carried by a conveyor (2; 96),

characterized in that

the minimum of one spray device (80, 81) is moved to and from along a circular path about an axis of rotation (66) by a predetermined angle of rotation, the spray device being kept a predetermined, radial distance from the axis of rotation (66), in that the coating material is sprayed by the minimum of one spray device (80, 81) during the circular to and/or fro motions on the object's front side, and in that during the spraying procedure either the minimum of one spray device (80, 81) is moved at the same speed as the objects in the objects' direction of advance parallel to said objects, or the objects (4) and the minimum of one spray device (80, 81) are kept immobile (stationary) in the direction of advance.

15. Method as claimed in claim 14, characterized in that the axis of rotation (66) of the takeoff element (62, 63, 64, 65) points vertically downward and the minimum of one spray device (80, 81) is configured lower than the power takeoff element.

16. Method as claimed in claim 14, characterized in that the axis of rotation (66) of the power takeoff element (62, 63, 64, 65) points horizontally forward and the minimum of one spray device (80, 81) is kept father forward in the direction of spraying than the power takeoff element.

17. Method as claimed in any of claims 14 through 16, characterized in that two of the spray devices (80, 81) are used, said spray devices being configured diametrically to the axis of rotation (66) of the power takeoff element (62, 63, 64, 65) at mutually opposite sites each radially equally distant from the axis of rotation (66).

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18. Method as claimed in claim 17, characterized in that the two-and-fro motion is carried out through an angle of rotation less than 180° but at least so large that the spray jet cross-sections of the spray devices (80, 81) partly overlap in the reversal position directions of rotation.

19. Method as claimed in either of claims 17 and 18, characterized in that the axis of rotation (66) of the power takeoff element (62, 63, 64, 65) is substantially horizontal, in that the centers of the spray jets of the spray devices (80, 81) when in the reversal positions of the direction of rotation are situated in a theoretical plane which is also situated in the axis of rotation (66) and which runs axially relative to the axis of rotation at an angle between 0° and at most 30° to a horizontal direction.

20. Method as claimed in claim 19, characterized in that during said rotation, less coating material per unit time is sprayed by the particular spray device moving along the lower arc of circle onto the front side (16) of the object than is sprayed onto said side by the particular spray device moving along the upper arc of circle.

21. Method as claimed in one of claims 14 through 20, characterized in that during the spraying procedure the minimum of one spray device is both rotated circularly to and fro in the above cited manner and simultaneously is moved in the objects' direction of conveyance parallel to and synchronously with the particular object being coated.

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